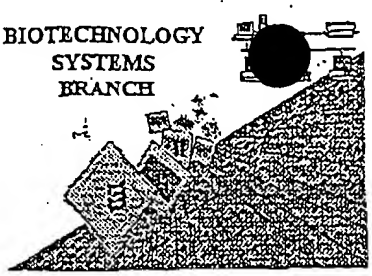
RAW SEQUENCE LISTING ERROR REPORT



PK

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/673,918

Source: PCT/09

Date Processed by STIC: 9/5/2001

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:
1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.
PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)
PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.
Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:
http://www.uspto.gov/web/offices/pac/checker

Raw Sequence Listing Error Summary

SERIAL NUMBER: 09/673,918

ERROR DETECTED	SUGGESTED CORRECTION
ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE	
1 ____ Wrapped Nucleics Wrapped Aminos	The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
2 ____ Invalid Line Length	The rules require that a line not exceed 72 characters in length. This includes white spaces.
3 ____ Misaligned Amino Numbering	The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
4 ____ Non-ASCII	The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
5 ____ Variable Length	Sequence(s) ____ contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
6 ____ PatentIn 2.0 "bug"	A "bug" in PatentIn version 2.0 has caused file <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
7 ____ Skipped Sequences (OLD RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence: (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading) (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) This sequence is intentionally skipped Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
8 ____ Skipped Sequences (NEW RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence. <210> sequence id number <400> sequence id number 000
9 ____ Use of n's or Xaa's (NEW RULES)	Use of n's and/or Xaa's have been detected in the Sequence Listing. Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present. In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
10 ____ Invalid <213> Response	Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
11 ____ Use of <220>	Sequence(s) _____ missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
12 ____ PatentIn 2.0 "bug"	Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
13 ____ Misuse of n	n can only be used to represent a single nucleotide in a nucleic acid sequence. N is not used to represent any value not specifically a nucleotide.

AMC/MH – Biotechnology Systems Branch – 08/21/2001

PCT09

RAW SEQUENCE LISTING DATE: 09/05/2001
PATENT APPLICATION: US/09/673,918 TIME: 14:37:47

Input Set : A:\16430seq.txt
Output Set: N:\CRF3\09052001\I673918.raw

Does Not Comply
Corrected Diskette Needed

3 <110> APPLICANT: Xia, Zhi-Qiang
4 Costa, Michael A
5 Davin, Laurence B
6 Lewis, Norman G
8 <120> TITLE OF INVENTION: Recombinant Secoisolariciresinol Dehydrogenase, and
9 Methods of Use
11 <130> FILE REFERENCE: WSUR116430
13 <140> CURRENT APPLICATION NUMBER: 09/673,918
14 <141> CURRENT FILING DATE: 2001-05-30
16 <150> PRIOR APPLICATION NUMBER: PCT/US99/08975
17 <151> PRIOR FILING DATE: 1999-04-23
19 <150> PRIOR APPLICATION NUMBER: 60/082,977
20 <151> PRIOR FILING DATE: 1998-04-24
22 <160> NUMBER OF SEQ ID NOS: 25
24 <170> SOFTWARE: PatentIn Ver. 2.0

pp 1-2

RRORED SEQUENCES

395 <210> SEQ ID NO: 6
396 <211> LENGTH: 273
397 <212> TYPE: PRT
398 <213> ORGANISM: Forsythia x intermedia
400 <400> SEQUENCE: 6
401 Met Gln Leu Arg Thr Ala Ile Ala Arg Arg Leu Glu Gly Lys Val Ala
402 1 5 10 15
404 Leu Ile Thr Gly Gly Ala Ser Gly Val Gly Glu Val Thr Ala Lys Leu
405 20 25 30
407 Phe Ser Gln His Gly Ala Lys Val Ala Ile Ala Asp Val Gln Asp Glu
408 35 40 45
410 Leu Gly His Ser Val Val Glu Ala Ile Gly Pro Ser Asn Ser Thr Tyr
411 50 55 60
413 Ile His Cys Asp Val Thr Asn Glu Asp Gly Val Lys Asn Ala Val Asp
414 65 70 75 80
416 Asn Thr Val Ser Thr Tyr Gly Lys Leu Asp Ile Met Phe Asn Asn Ala
417 85 90 95
419 Gly Ile Ser Asp Pro Tyr Lys Pro Arg Val Ile Asp Asn Glu Lys Ala
420 100 105 110
--> 422 Asp Phe Glu Arg Val Leu Ser Xaa Asn Xaa Thr Gly Val Phe Leu Phe
423 115 120 125
425 Met Lys His Ala Ala Arg Ile Met Val Pro Ala Arg Asn Gly Cys Ile
426 130 135 140
428 Ile Ser Thr Ala Ser Leu Ser Ser Thr Met Gly Gly Gly Ser Ser His
429 145 150 155 160
431 Ala Tyr Cys Gly Ala Lys His Ala Val Leu Gly Leu Thr Arg Asn Leu
432 165 170 175
434 Ala Val Glu Leu Gly Gln Phe Gly Ile Arg Val Asn Cys Leu Ser Pro

see item 9 on Error Summary Sheet

RAW SEQUENC[redacted]STING
PATENT APPLICATION: US/09/673,918

DATE: [redacted]5/2001
TIME: 14:37:47

Input Set : A:\16430seq.txt
Output Set: N:\CRF3\09052001\I673918.raw

```
435                 180                 185                 190
437 Phe Gly Leu Pro Thr Pro Leu Ala Lys Lys Phe Ser Gly Ile Glu Asn
438         195                 200                 205
440 Asp Val Asp Phe Ala Asn Ala Ile Glu His Ala Gly Asn Leu Lys Gly
441     210                 215                 220
443 Thr Lys Leu Arg Ile Glu Asp Val Ala Asn Ala Ala Leu Phe Leu Ala
444 225                 230                 235                 240
446 Ser Asp Glu Ala Gln Tyr Val Ser Gly Gln Asn Leu Phe Ile Asp Gly
447                 245                 250                 255
449 Gly Phe Ser Val Cys Asn Ser Ala Ile Lys Met Phe Gln Tyr Pro Asp
450             260                 265                 270
452 Ser
```

Use of n and/or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

9/5/01

VERIFICATION [redacted]MARY
PATENT APPLICATION: US/09/673,918

DATE: [redacted]/2001
TIME: 14:37:48

Input Set : A:\16430seq.txt
Output Set: N:\CRF3\09052001\I673918.raw

```
:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
:351 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:5
:351 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
:352 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:5
:352 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
:422 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:6
:758 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
:761 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
:804 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
:823 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
:842 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
:879 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
```

Xaa represents any amino acid.

<223> cDNA molecule encoding secoisolariciresinol dehydrogenase wherein Xaa ~~represents~~ represents any amino acid.

9/5/01

File No.: WSUR116430 Atty/Secy: BFM/lal Date: 11/05/2001

Appln. No.: 09/673,918 Filed: 10/23/2000

Applicant(s): Z.Q. Xia et al.

Title: RECOMBINANT SECOISOLARICIRESINOL DEHYDROGENASE, AND METHODS OF USE

The following have been received in the U.S. Patent and Trademark Office on the date stamped hereon via first-class mail, with a signed Certificate of Mailing:

Transmittal of Response to Notification of Defective Response (2 pages) in duplicate

Sequence Listing (22 pages)

Computer readible copy of sequence listing (diskette)

Copy of the Notification of Defective Response (2 pages)

Marked-up copy of the Raw Sequence Listing (5 pages)